*Tropical Ecosystem Studies*

Studies of selected tropical ecosystems in both natural and experimentally manipulated states would provide important benefits for the development of continuously productive ecosystems in the tropics and also indicate baseline conditions in different areas of ecology and population biology. Sites selected for detailed studies include western hemisphere rain-forest areas having soils of comparatively high (LaSelva, Costa Rica) and low (*terra firme* of Central Amazon Basin) fertility, a site in tropical deciduous forest (Chamela, Jalisco, Mexico) and a site in moist tropical forest in the Asian lowlands (Mulu, Sarawak).

Studies at each of these sites should focus on monitoring of selected physical, chemical, and biological, parameters, water- and nutrient-cycling, ecosystem energetics, seasonal rhythm of seed and fruit production, physiological plant ecology, food-webs, and the dynamics of microhabitats and 'patches'.

*Tropical Aquatic Systems*

Selected studies of major rivers, lakes, streams, and wetlands, of the tropics would relate information to baselines of scientific importance and direct applicability to future development enterprises. In the near future, major changes such as watershed deforestation, impoundment for energy production and flood-control, and urban-industrial pollution, will occur in all of these types of area.

Water chemistry and nutrient processing, plankton, fishes, bottom fauna, key vertebrates, and land–water interactions, should be studied in the following areas:

- Major rivers with their main branches, such as the Amazon, Orinoco, and Zaire (Congo).
- Smaller rivers such as the Musi in Sumatra and the Purari in Papua New Guinea.
- Closed-basin lakes, lakes that contain major assemblages of endemic species, and lakes that will be subject to changes in the near future—including Lakes Valencia and Maracaibo in Venezuela, Lake Malawi in Africa, Lake Titicaca in South America, and the volcanic lakes in insular south-east Asia.
- Wetlands, including the Sudd in Africa, the Pantanal of Mato Grosso in Brazil, the swamps of Territorio Amapá in Brazil, of Beni Department in Bolivia, and of Benguelu in Zambia, much of the *varzea* of the Amazon and Orinoco basins, and the peat swamps of south-east Asia.

The recommendations of this Committee are designed to amplify the study of tropical biology and to support ongoing efforts such as the UNESCO/MAB 1 Project and others, and not to displace any existing projects. Although the social factors involved in the tropical arena are enormously complex and urgently deserve attention, the scientific issues are relatively simple to comprehend. Mankind is faced with perhaps the last real opportunity to discover much about the tropics before it is drastically, and perhaps irreversibly, altered. Thus, it seems appropriate for biologists to develop priority research needs and seek to implement them through whatever means they may have at their disposal.

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## Madagascar: An International Conservation Priority

The island of Madagascar has been identified as a top international conservation priority by the World Wildlife Fund, which is setting up a base there to develop projects in cooperation with the Malagasy Government. The Government has issued an official decree for the establishment of WWF representation, naming Barthelemi Vaohita as Director of WWF operations on the island.

Madagascar has become increasingly important in world conservation because of the serious threat to its unique collection of endemic taxa comprising much of its wildlife. The island—one of the world's very largest—has been separated from any other land-mass for some 60 million years and this has allowed a rich variety of often endemic flora and fauna to develop. But now the problem is that Madagascar (Malgache) supports a human population of eight millions which is expanding at the rate of three per cent each year, placing a heavy strain on land and forestry resources. The natural habitats of a wide range of species are being destroyed, and much of the flora and fauna is in danger of extinction.

Among the island's unique endangered biota are various species of Lemuridae, which constitute some of Man's earliest primate relatives and were formerly far more widespread. Indeed 'Madagascar is a microcosm of the problems facing conservationists all over the world,' commented Dr Lee Talbot, WWF's Director of Conservation. 'The remaining wild areas represent an important part of the life-support system for the human population as well as the wild species. The challenge is to find a way to meet the needs of the people without damaging the ecological system on which they rely.'

Mr Vaohita's appointment follows talks between the Government and WWF International's Vice-President Dr Luc Hoffmann and Special Adviser Jean-Jacques Petter, who both recently returned from a mission to Madagascar, where their discussions involved the chairman of the Supreme Revolutionary Council, Charles Ravoajanahary, and senior officials from several ministries including finance, planning, and scientific research.

Scientific conservation projects for the island are now being developed in accordance with priorities established by the Survival Service Commission of the International Union for Conservation of Nature and Natural Resources (IUCN). Included is a plan to build a new education centre to provide facilities for explaining conservation issues to villages and schools.

The projects represent a follow-up of decisions taken at a IUCN conference on conservation in Madagascar, held in the capital, Tananarive, some years ago. As WWF's delegate, Mr Vaohita will coordinate all foreign conservation work in Madagascar and administer funds for it, cooperating closely with the Government's advisers.

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